

FIG.3

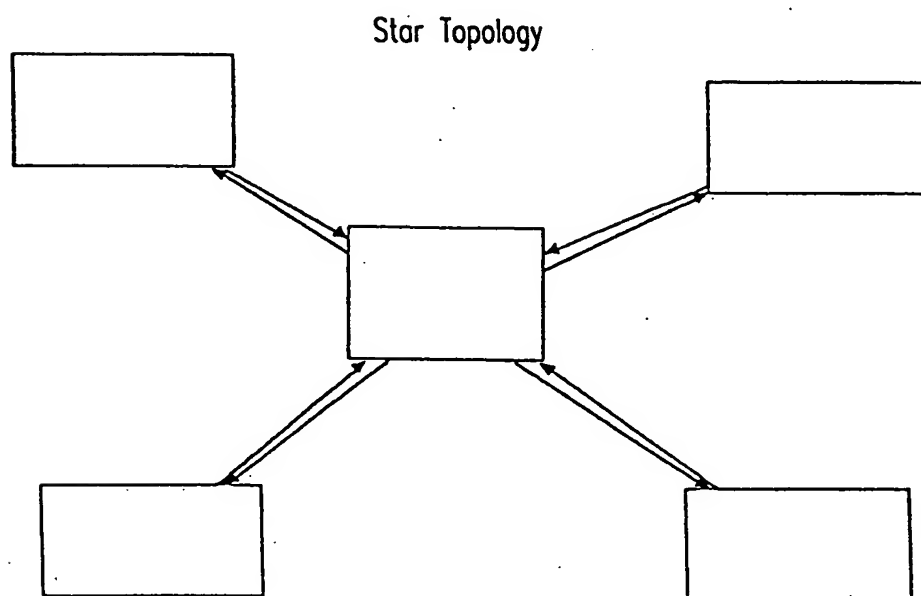


FIG.4

Row get_valrec(Row R, Column C)

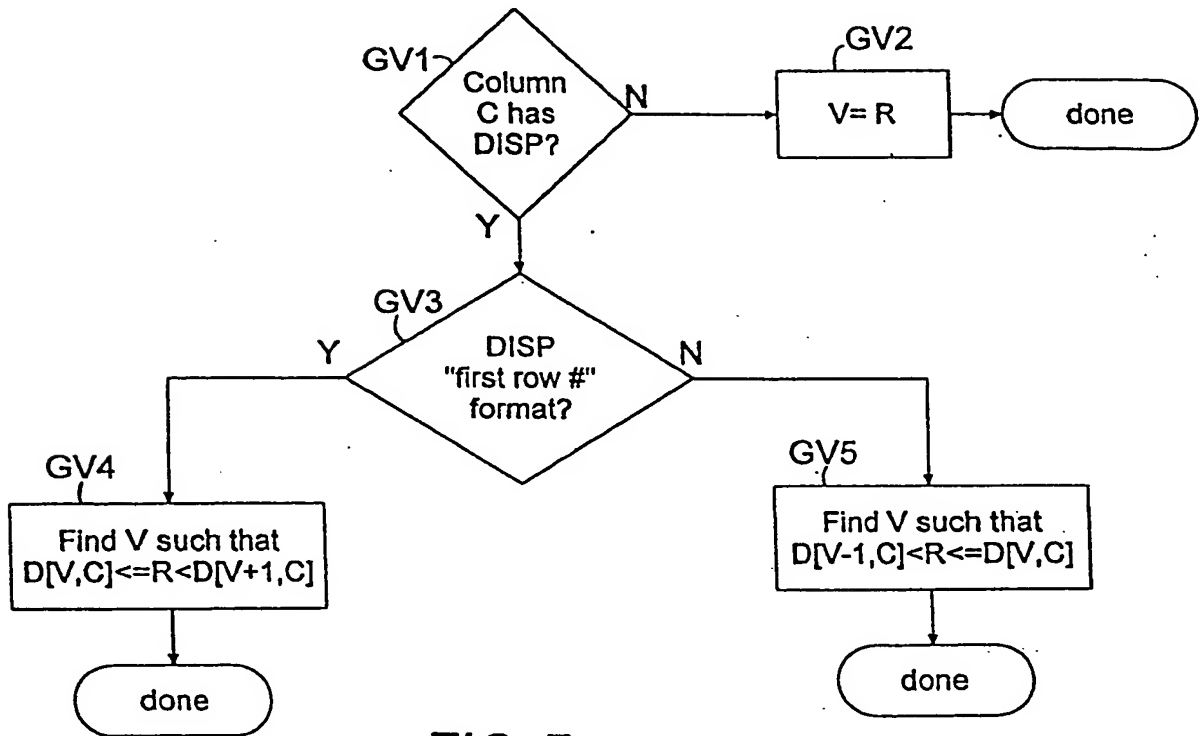


FIG.5

Next_R = R_from_VO(Column C, I, 0)

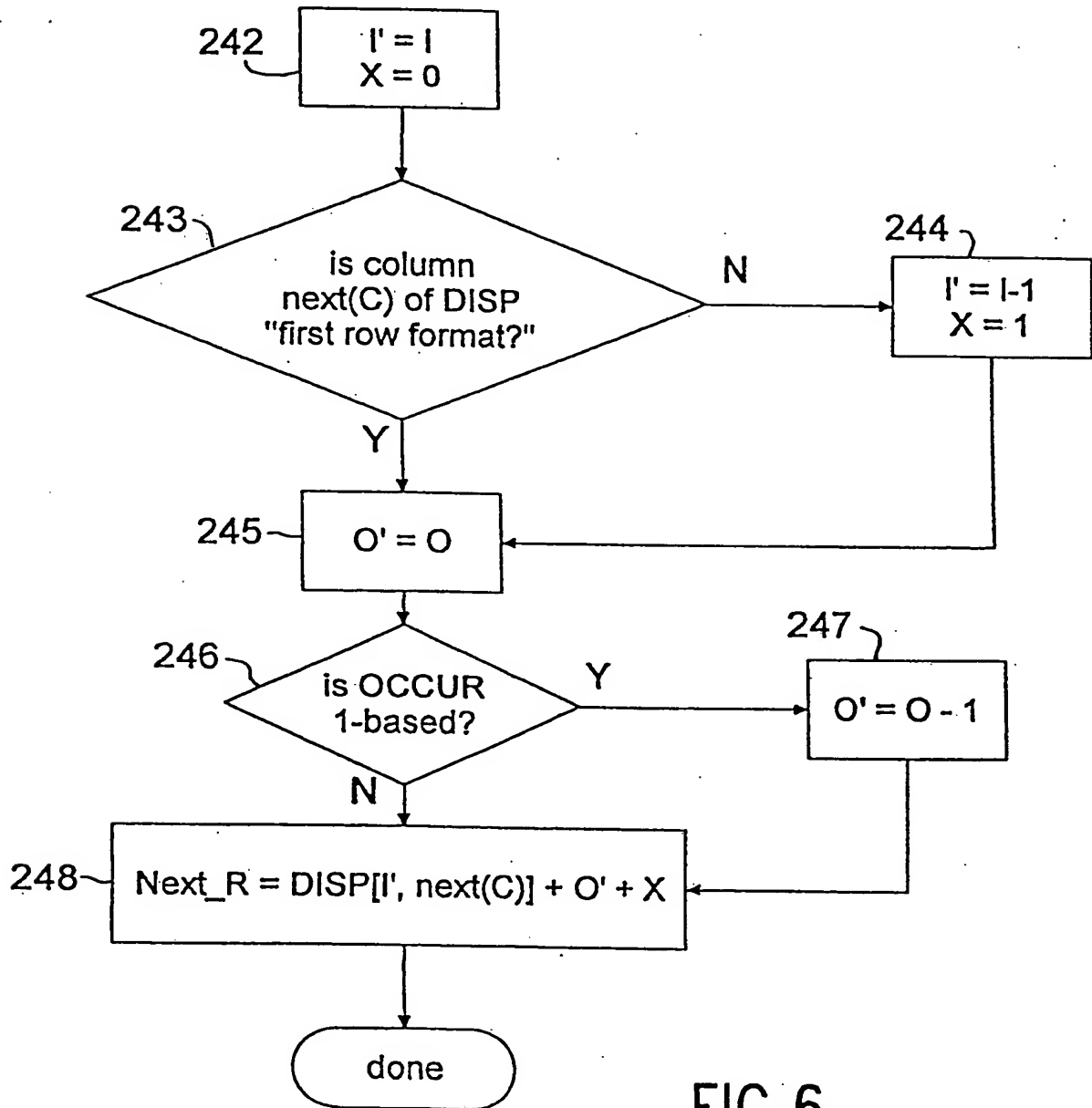
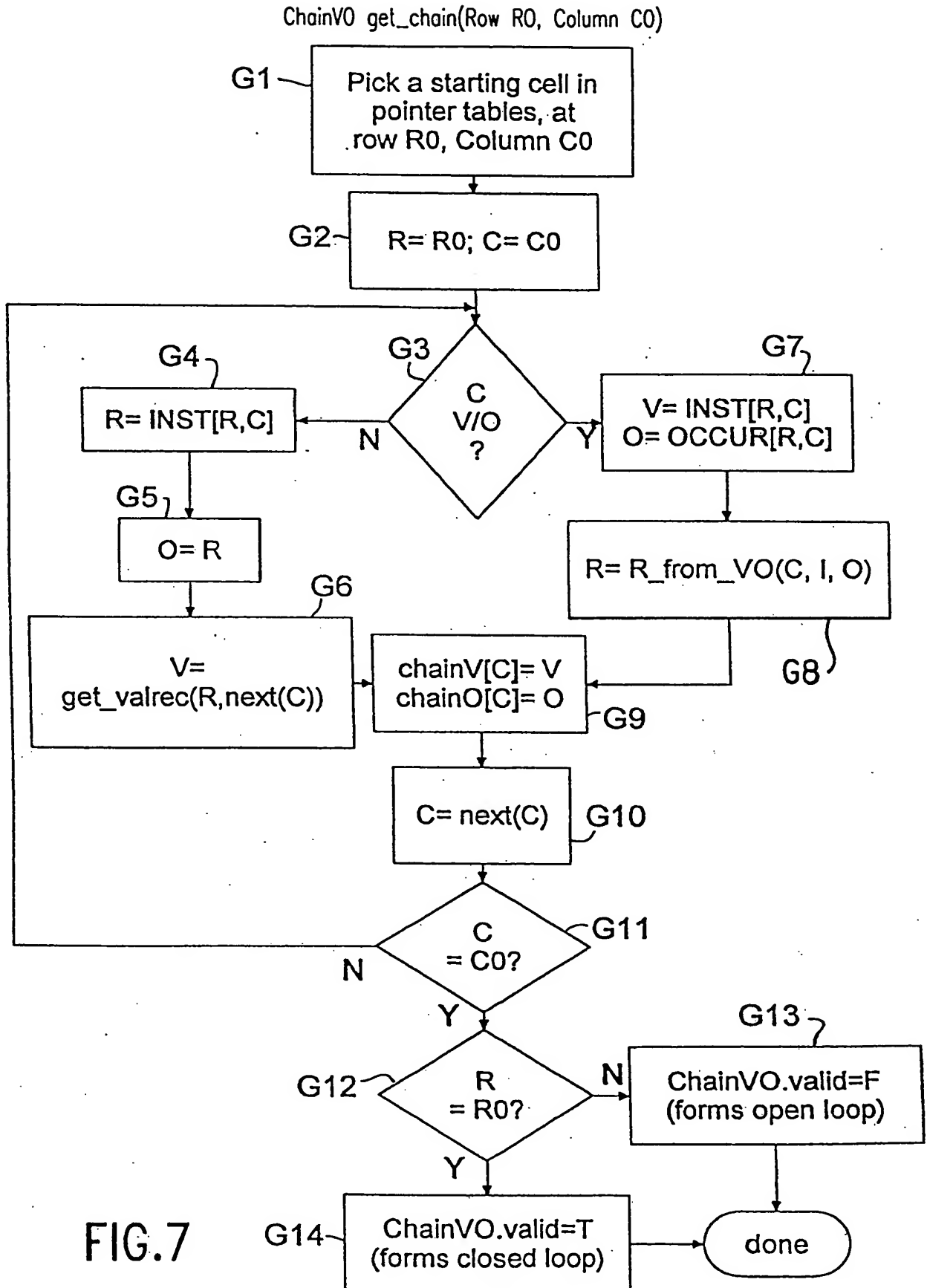


FIG.6



int put_chain(Column C0, ChainVO rec, int count)

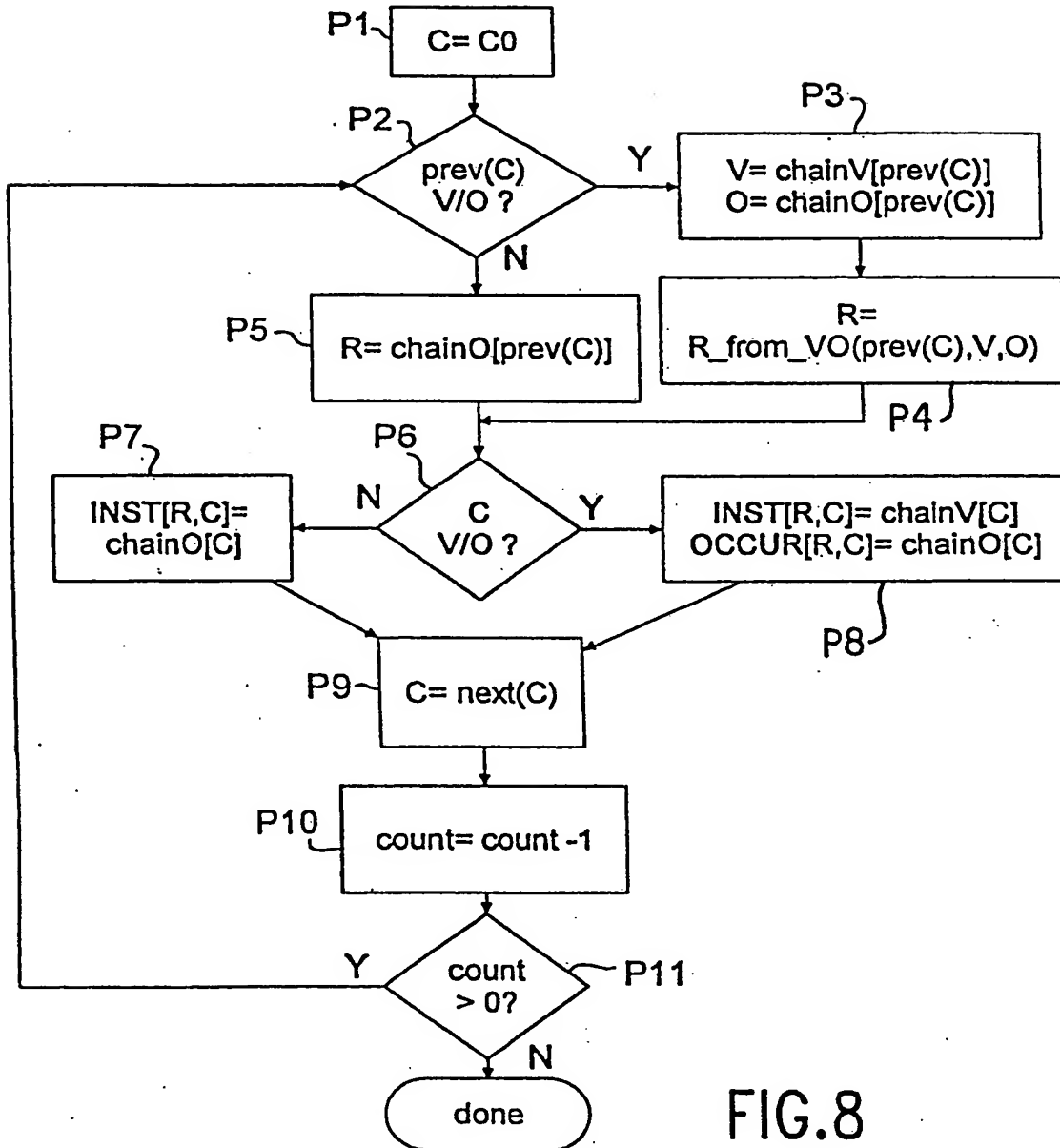


FIG.8

int swap(Column C, Row R1, Row R2)

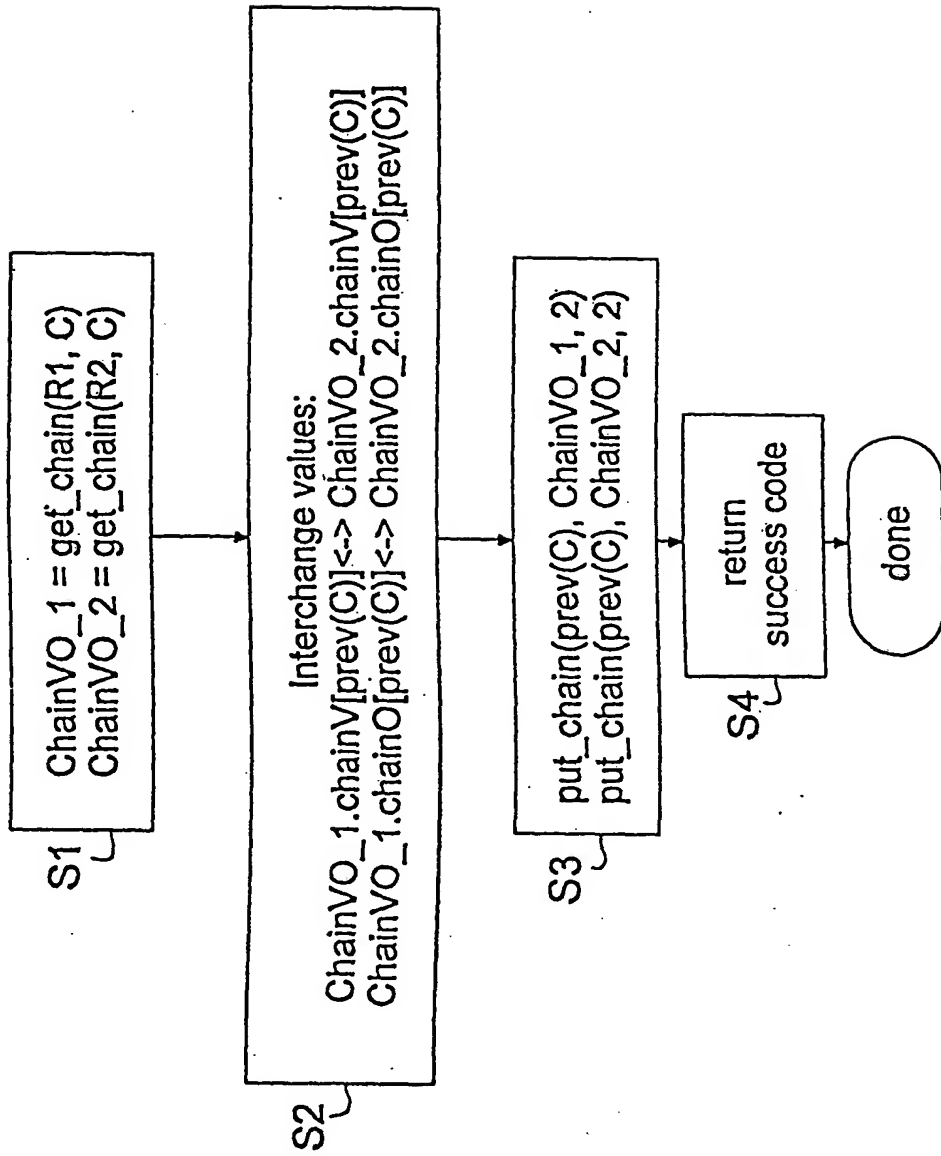


FIG.9

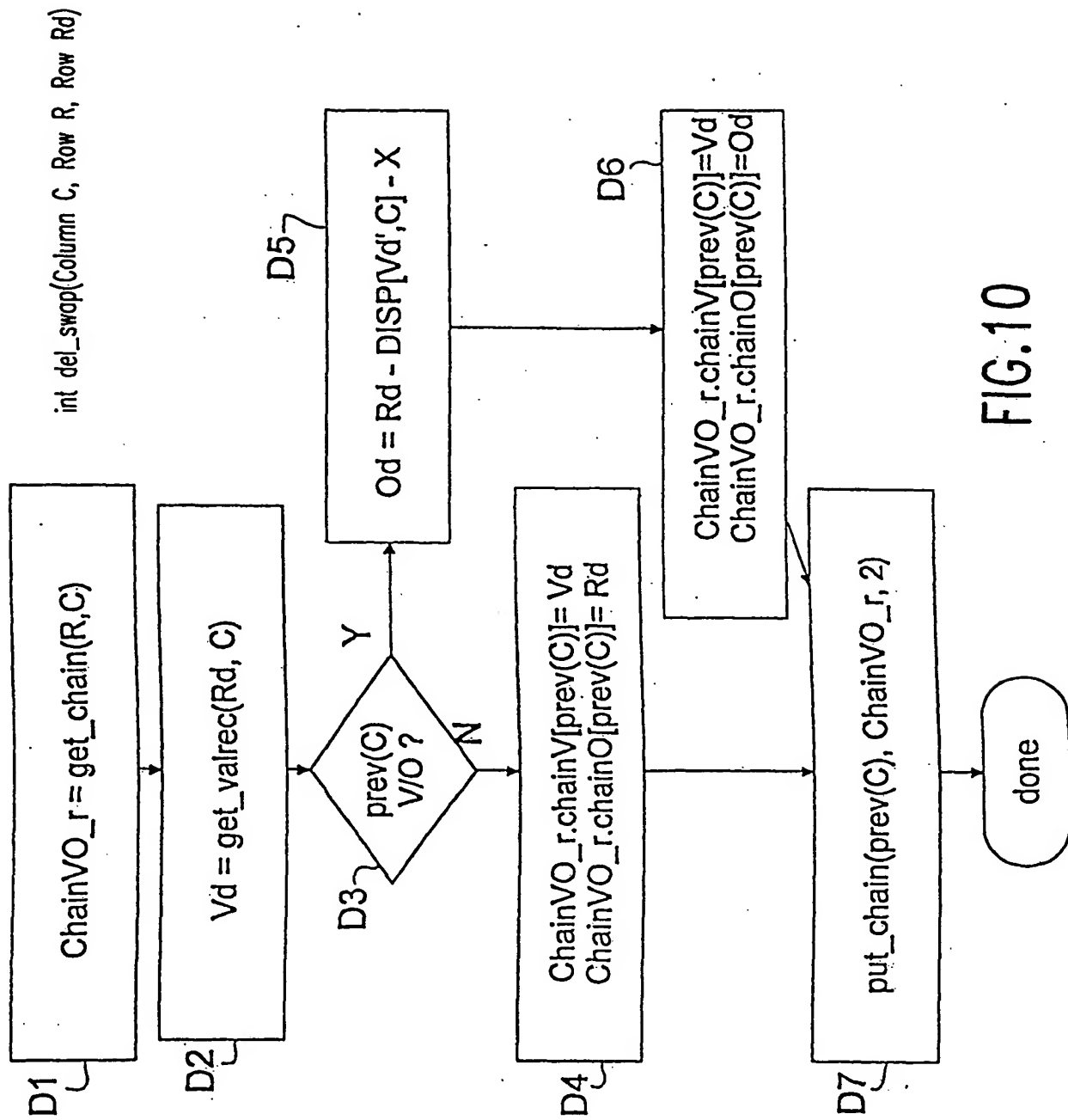


FIG.10

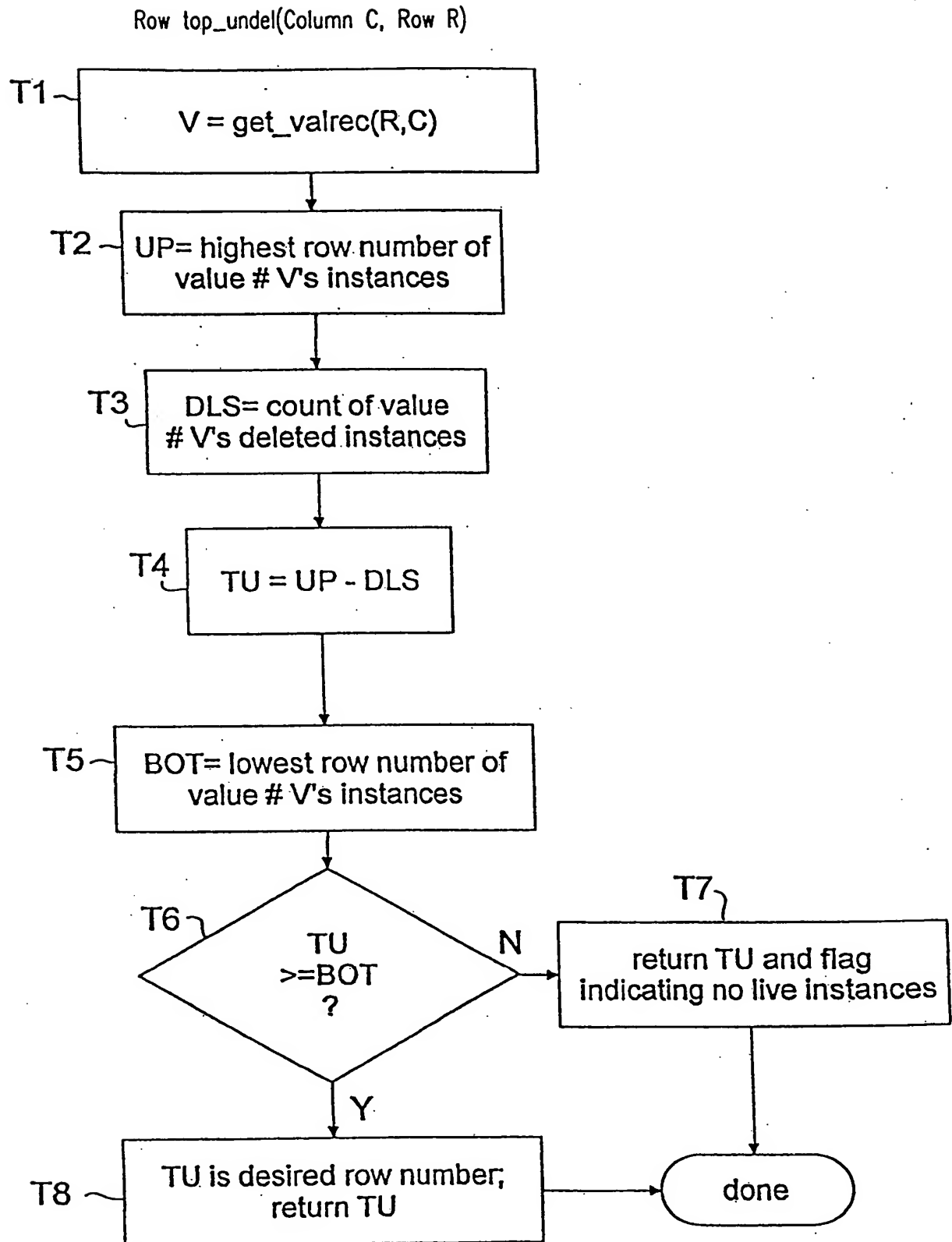


FIG.11

int l_move_space_uplist(Column C, Row V)

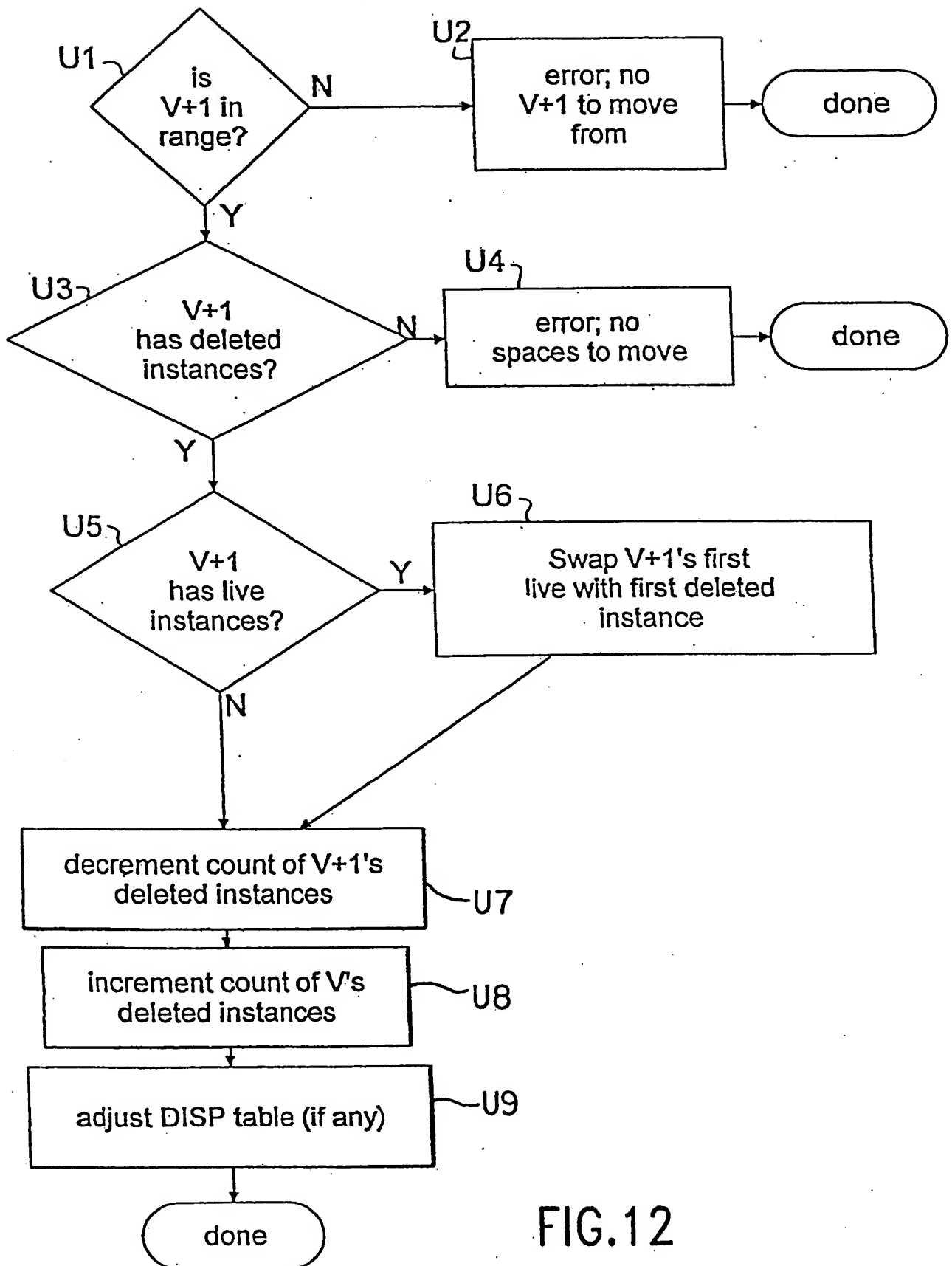


FIG.12

int l_move_space_downlist(Column C, Row V)

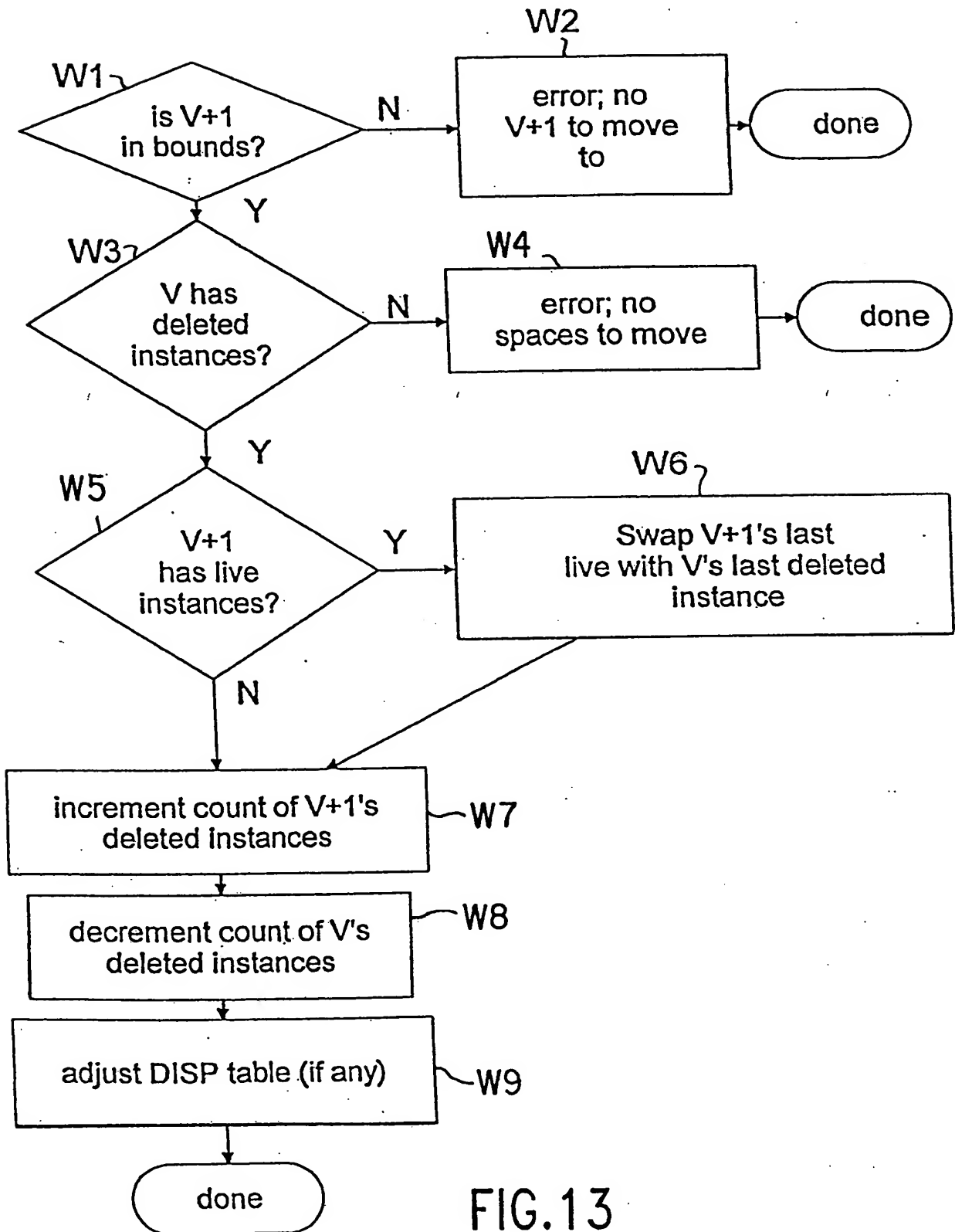


FIG.13

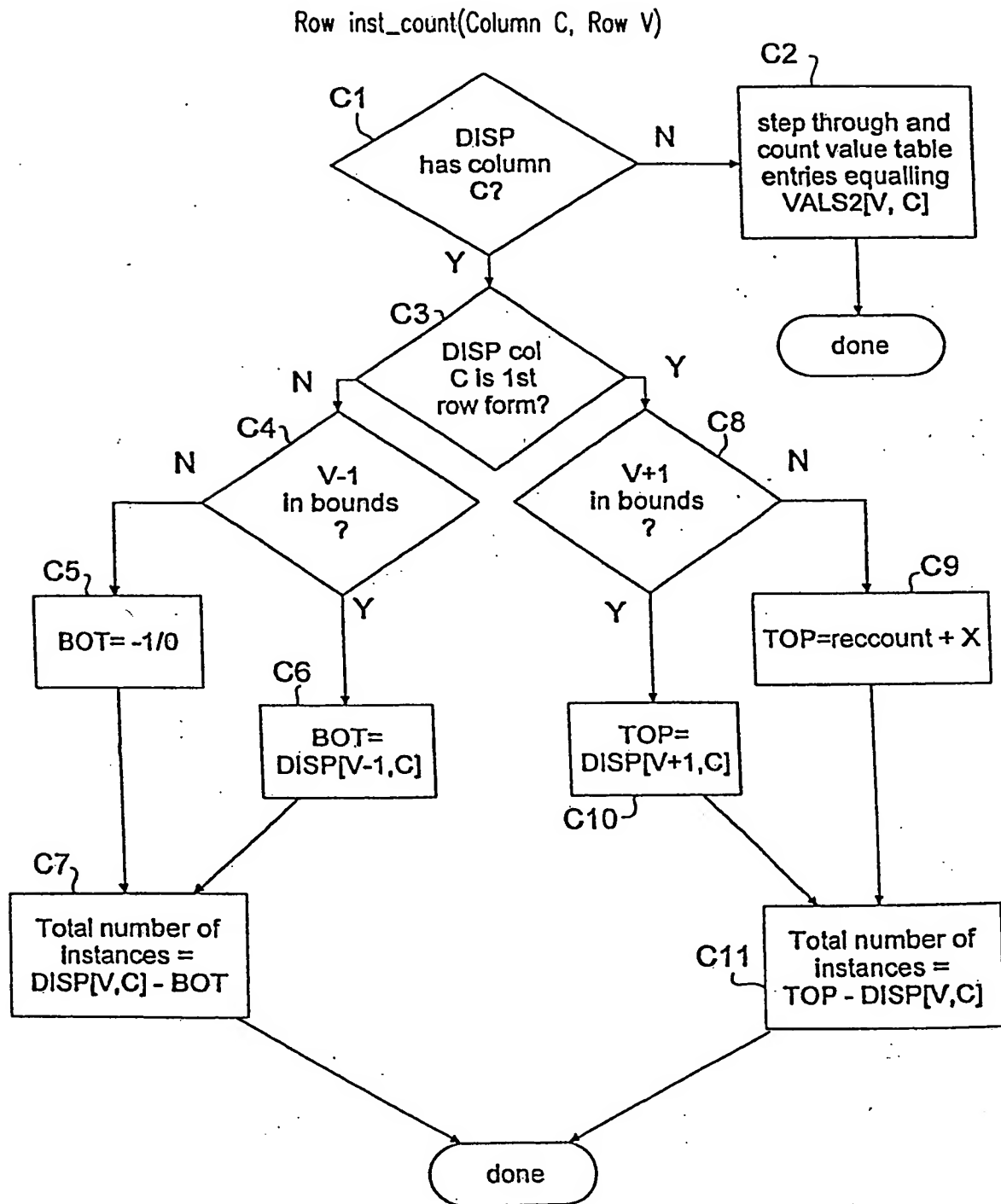


FIG.14

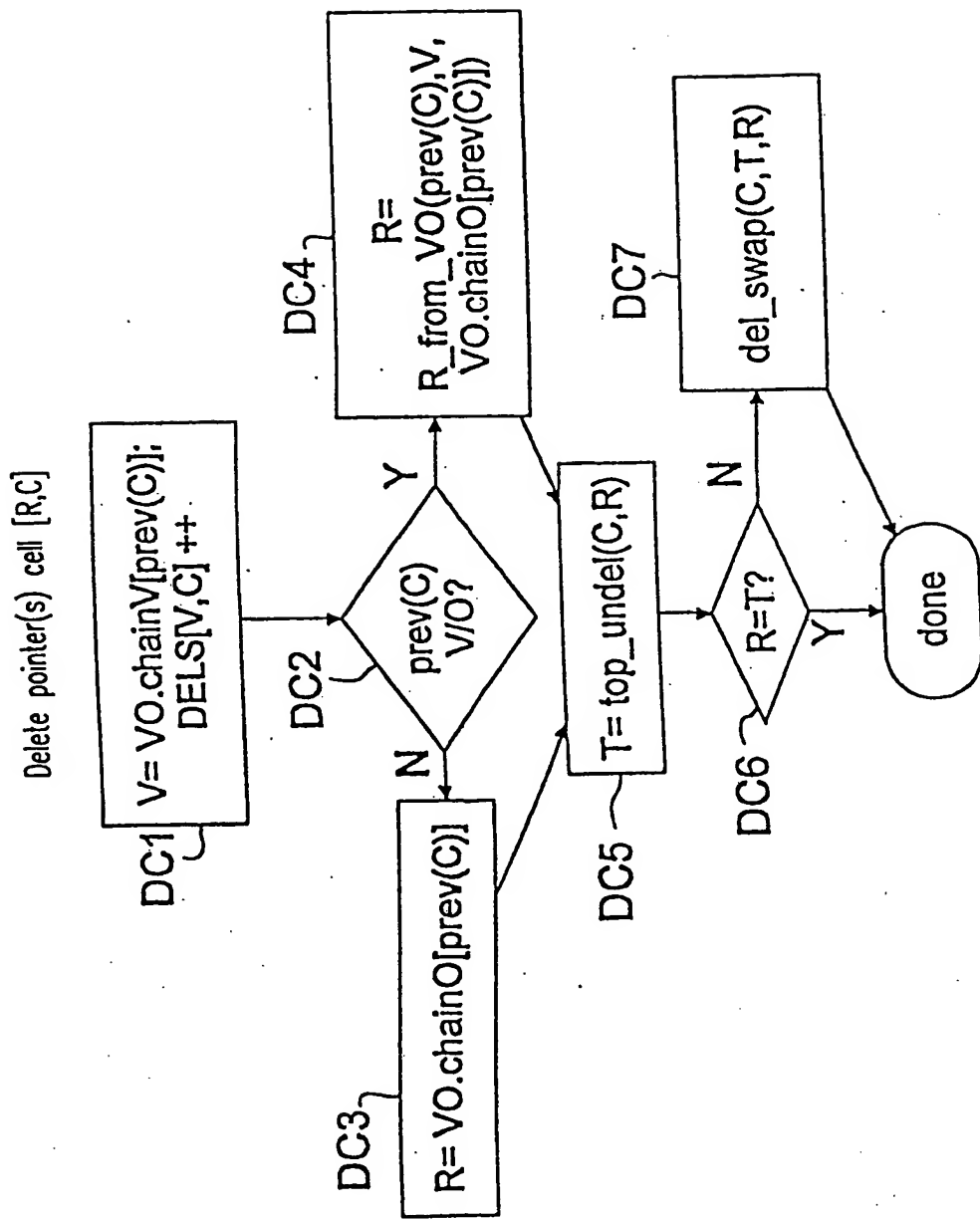


FIG.15

int insert_v(Row V, Column C, void*newvalptr)

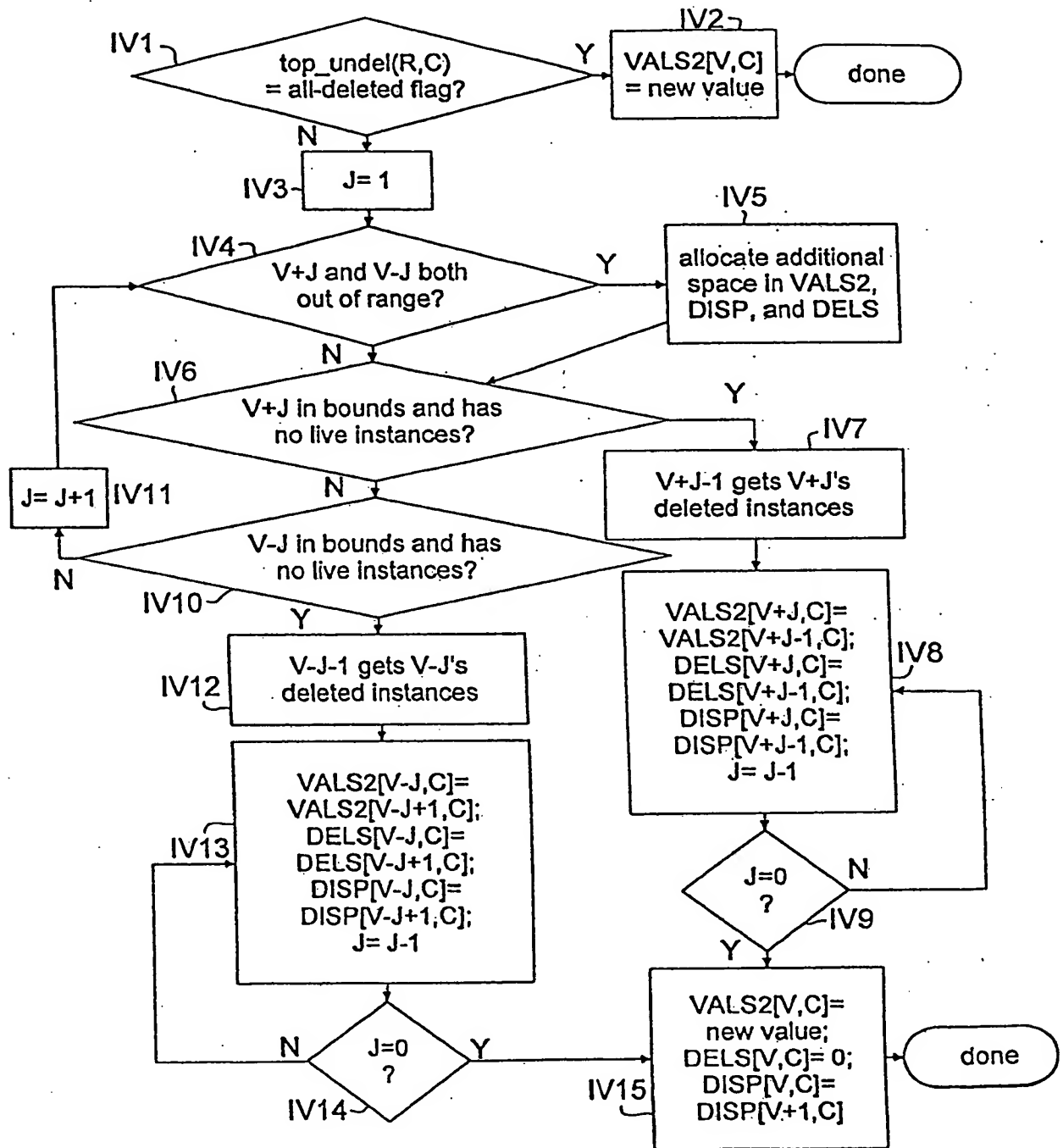


FIG.16

int insert_vov(Row V, Column C, void*newvalptr)

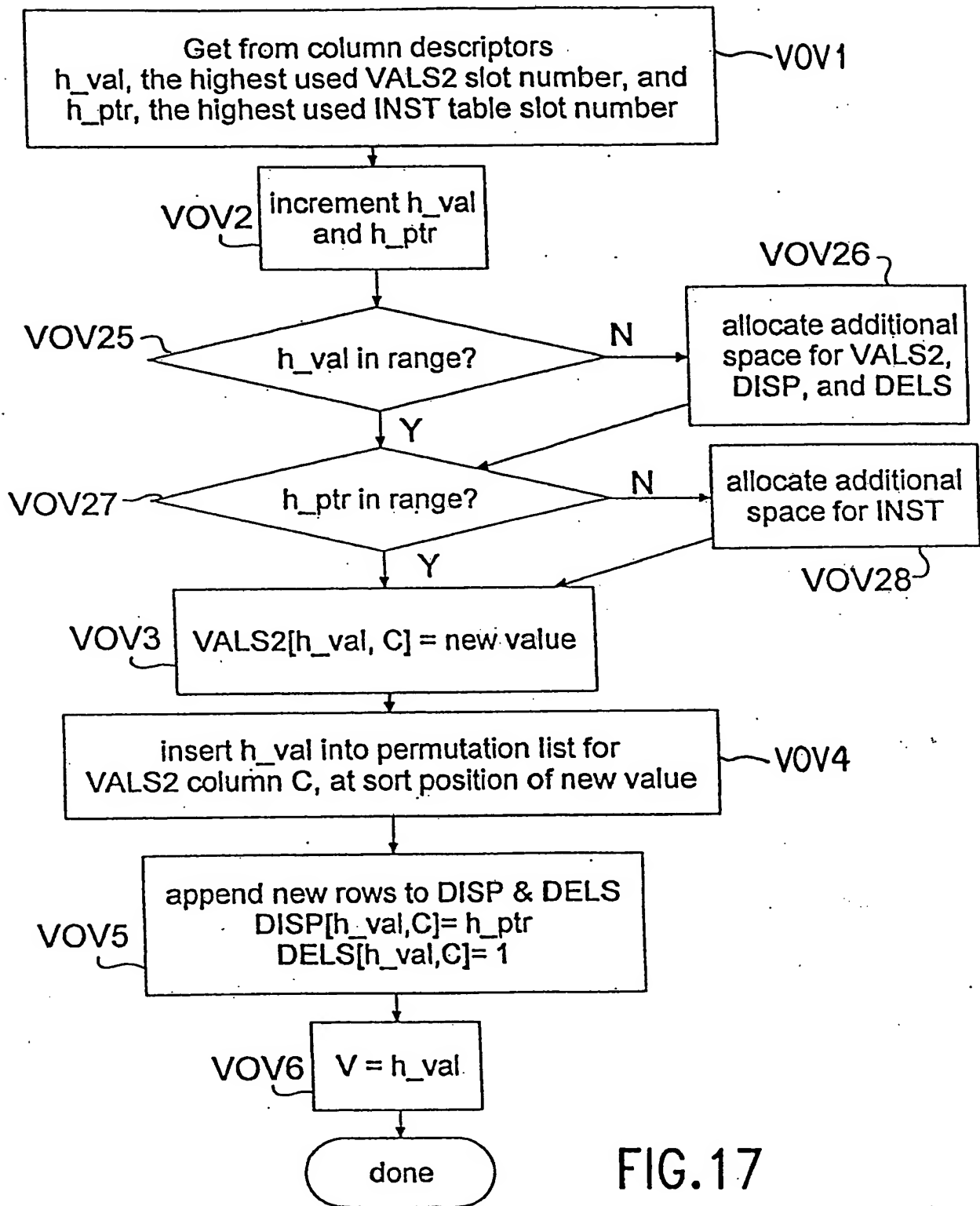


FIG.17

int insert_c(ChainVO VO, Column C)

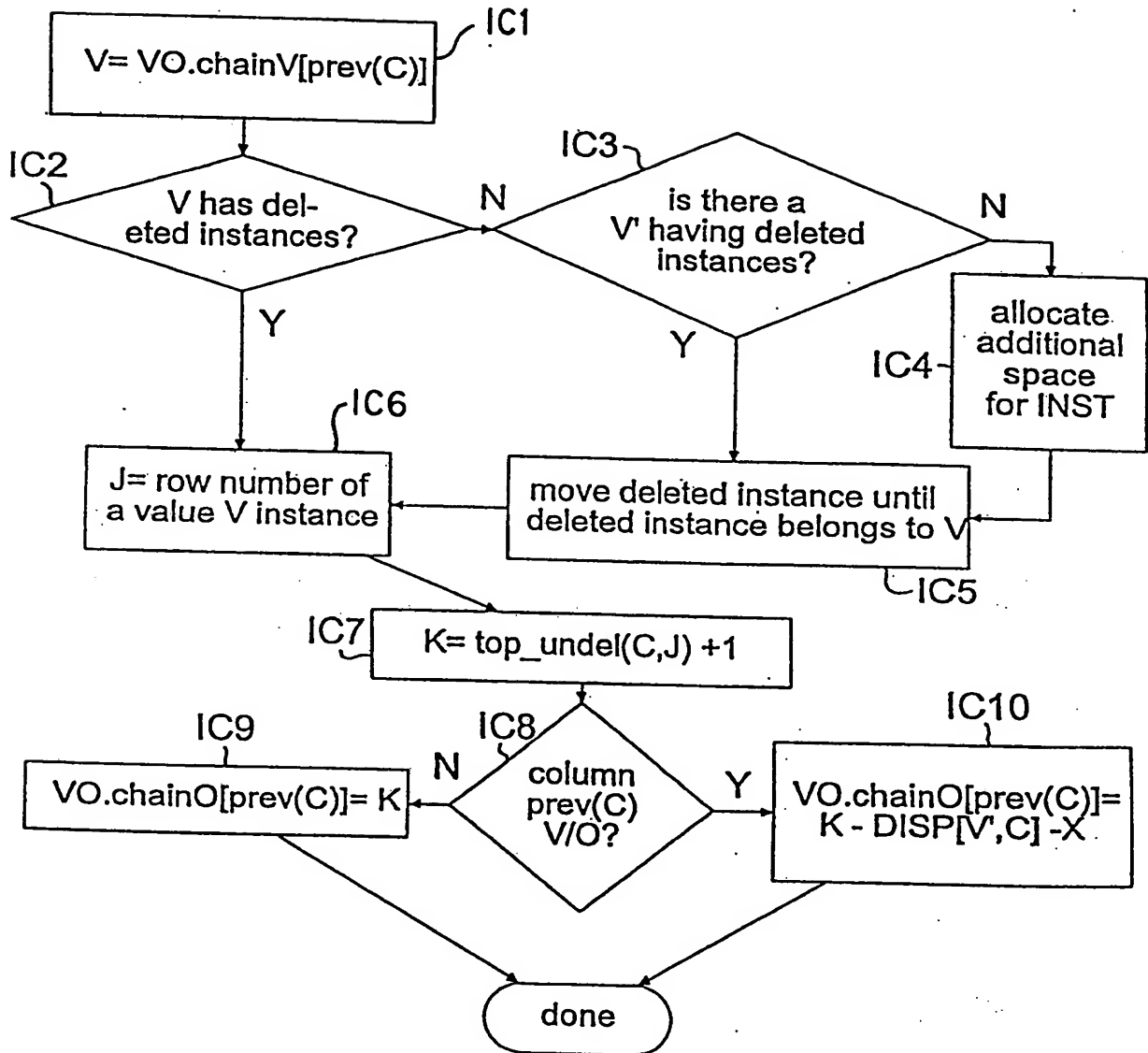


FIG.18

Delete record through cell $[R_0, C_0]$ of pointer table(s)

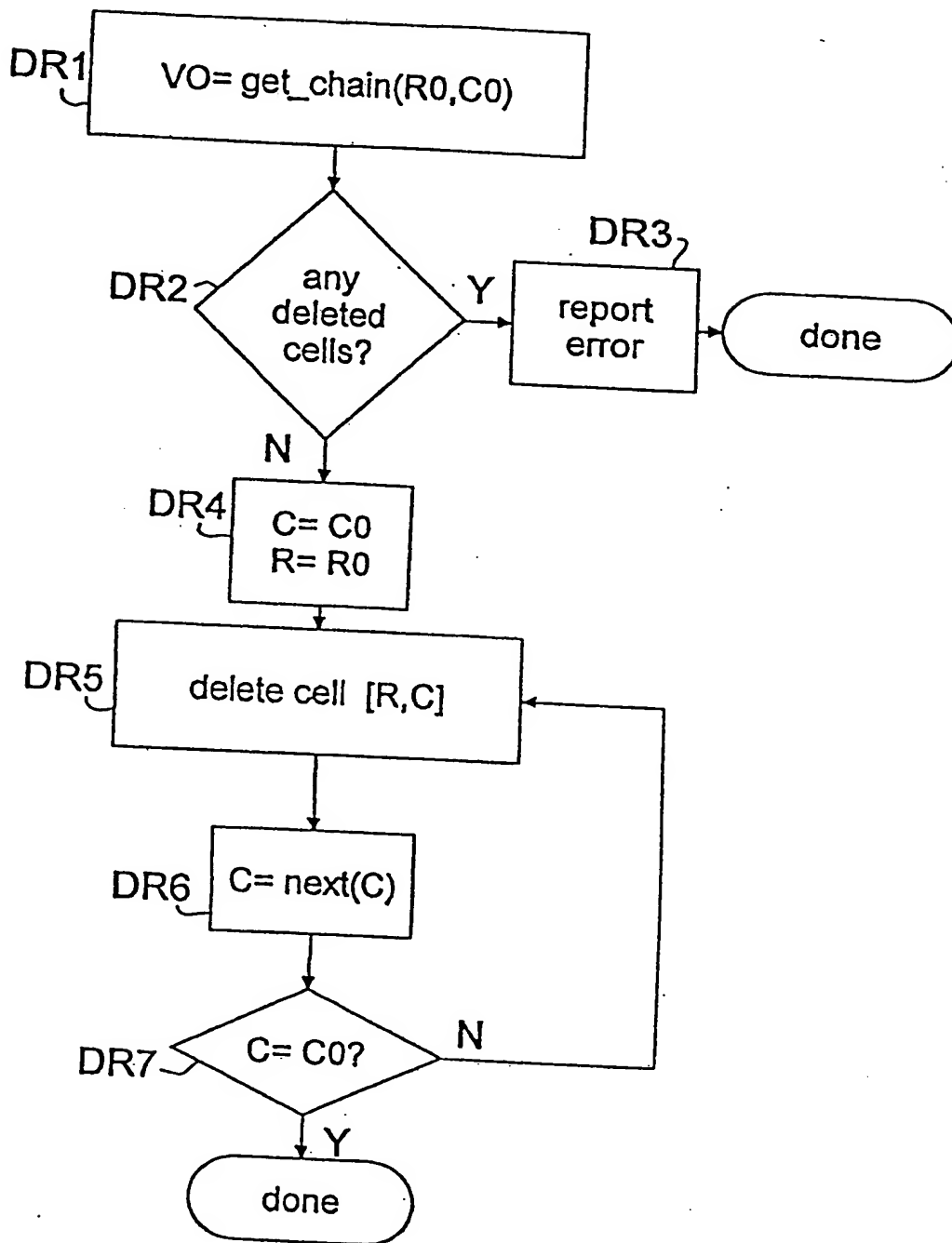


FIG.19

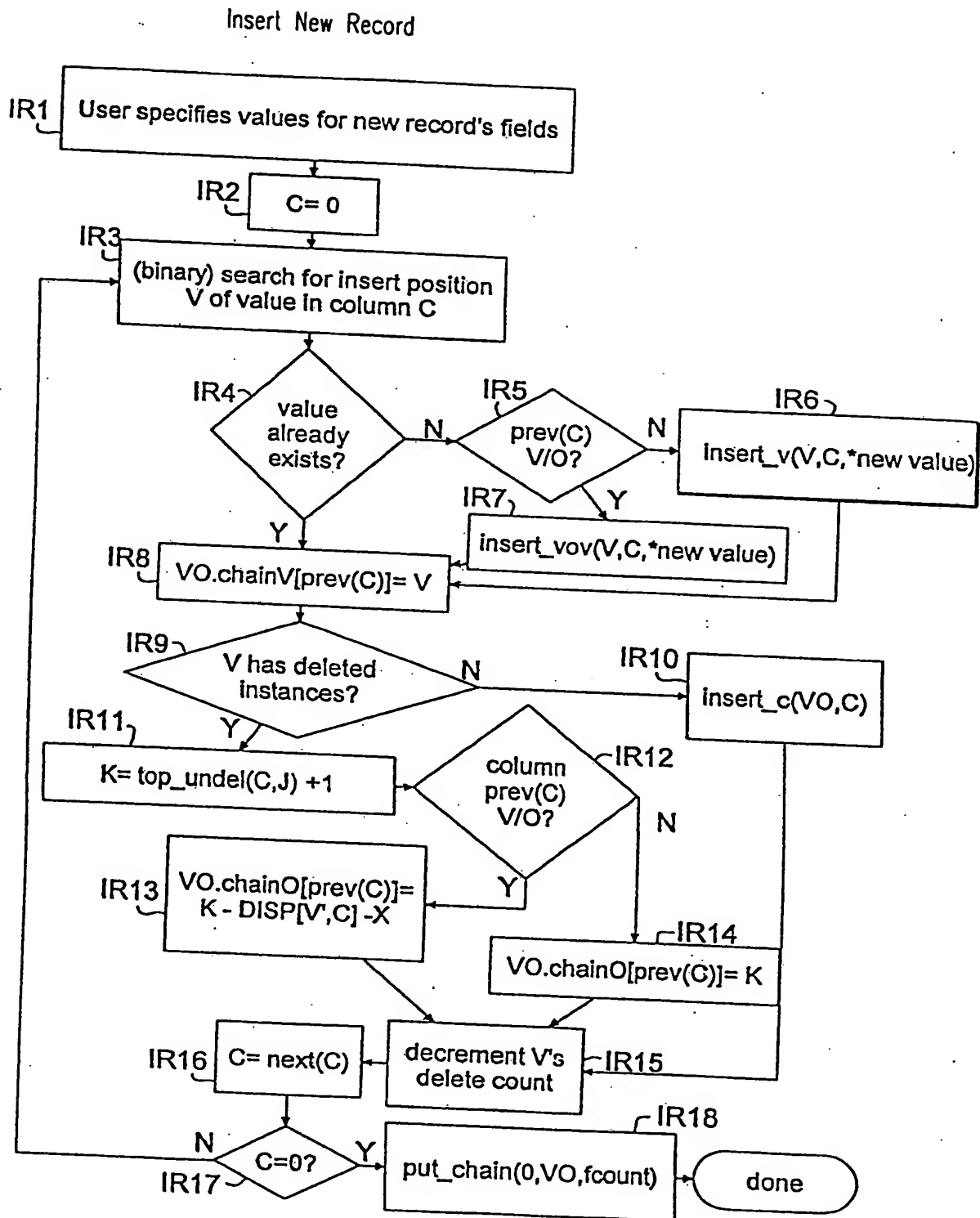


FIG. 20

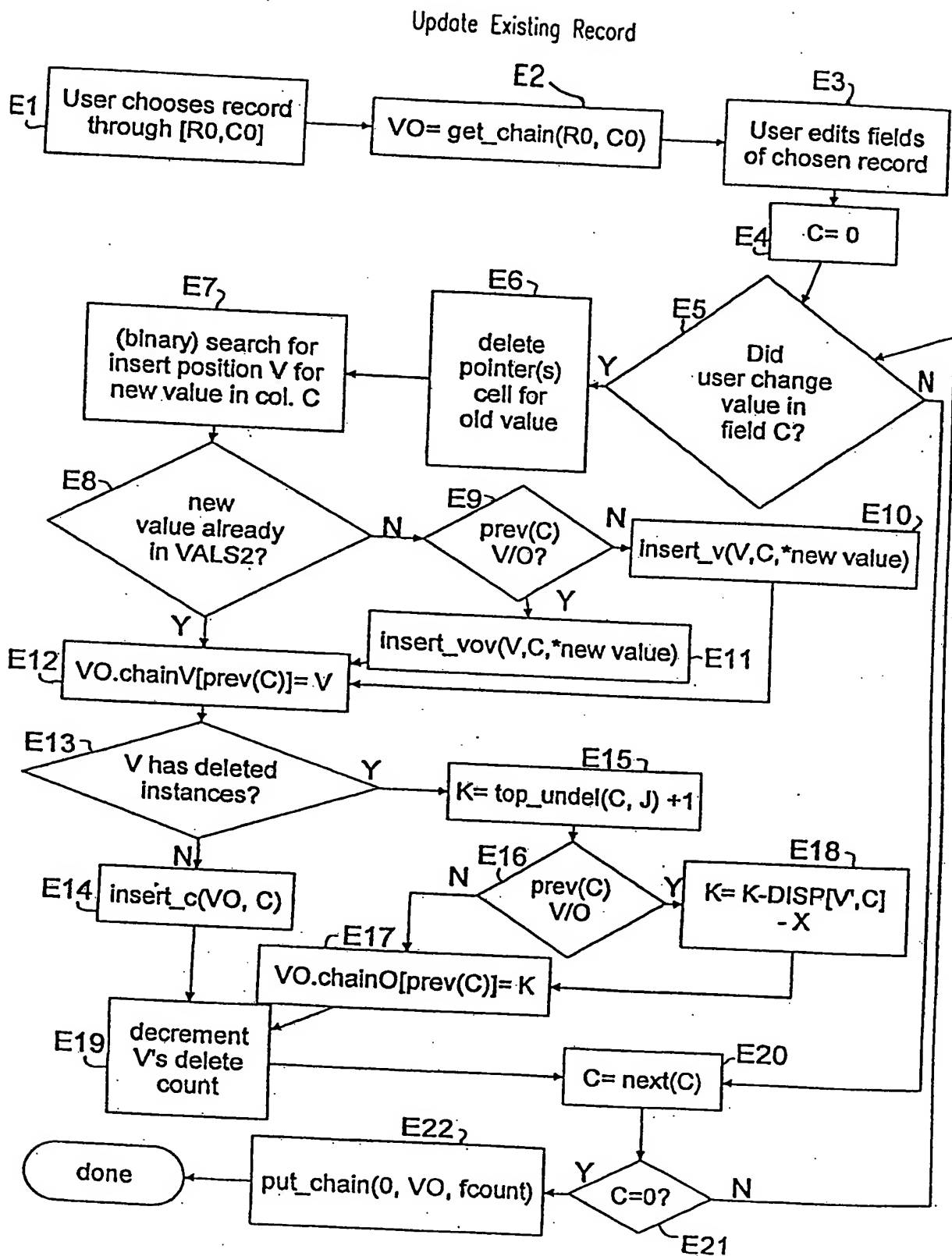


FIG.21

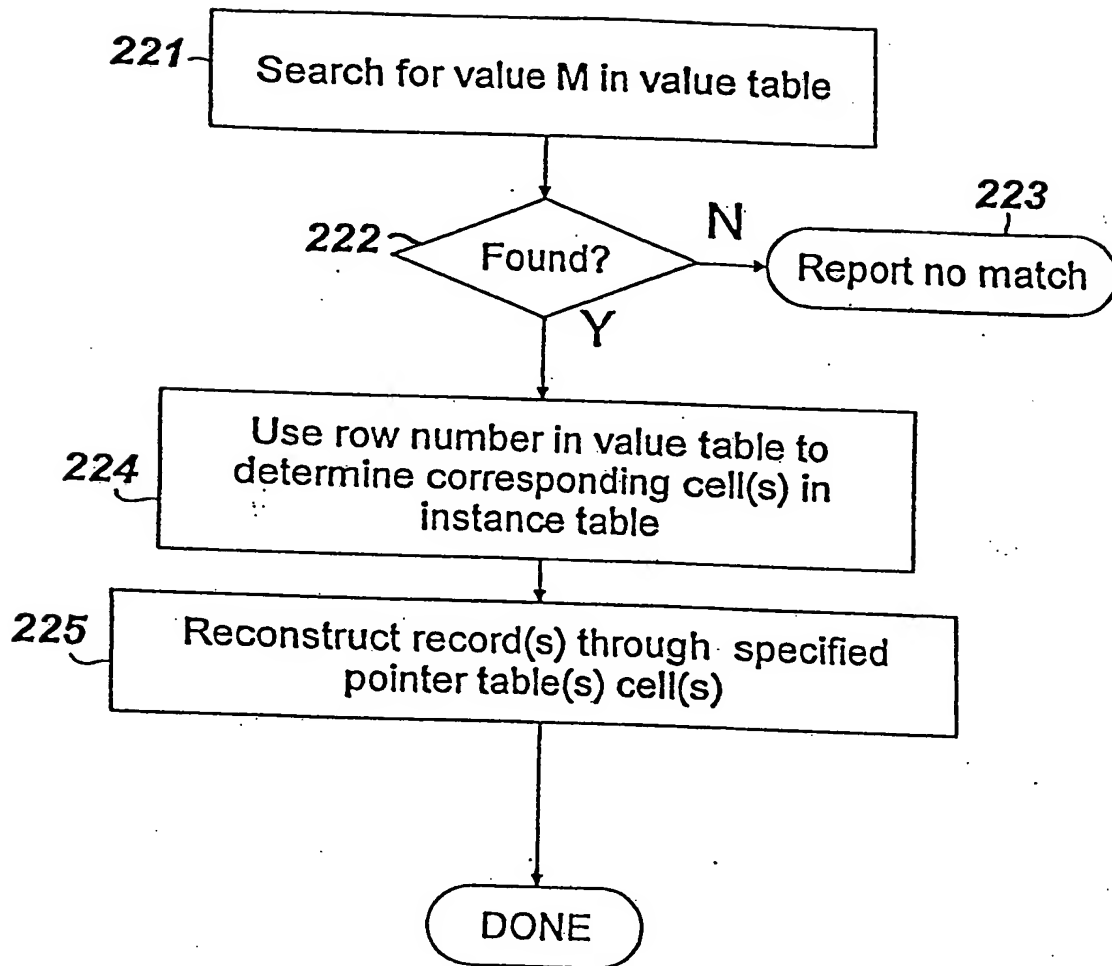


FIG.22

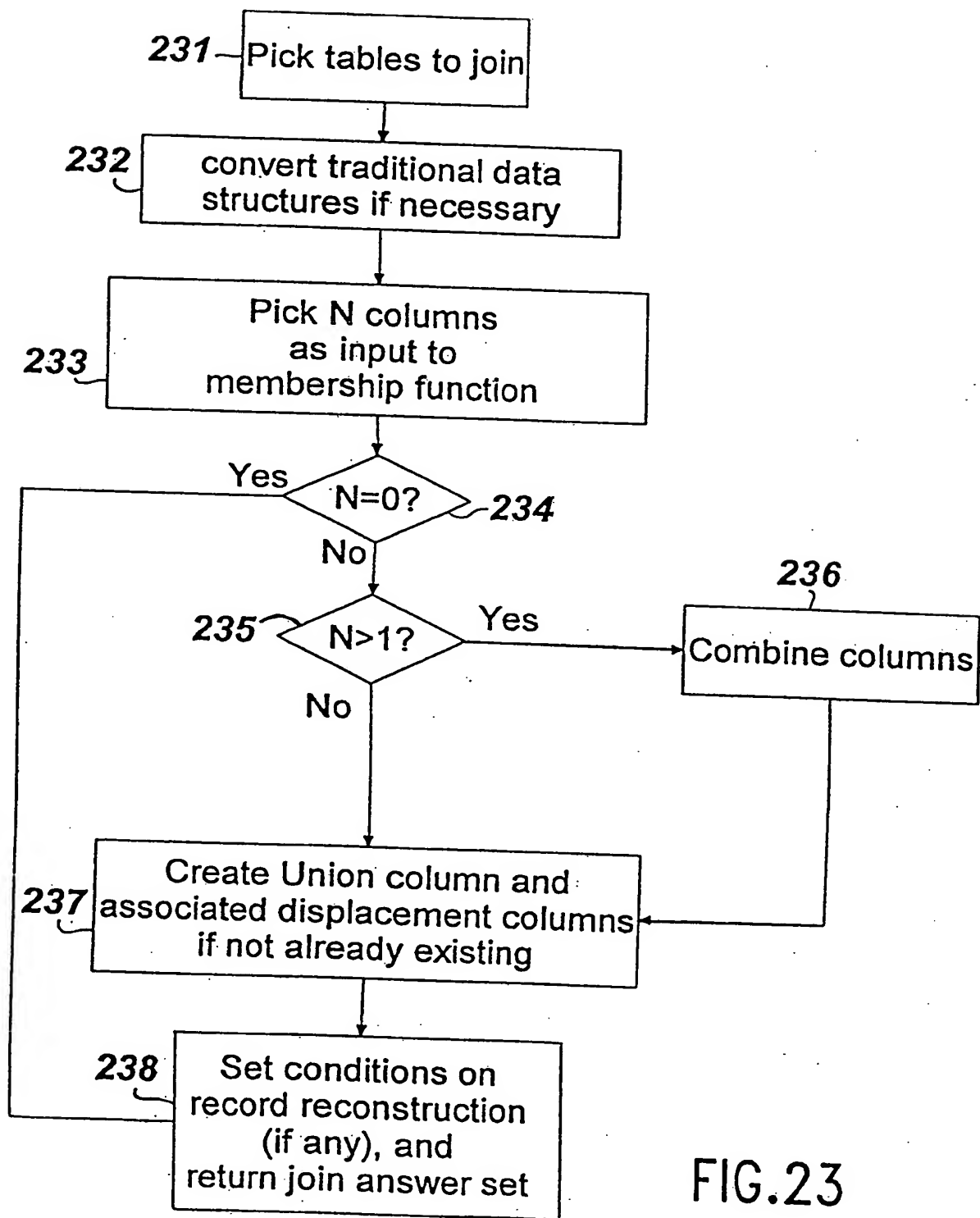


FIG.23